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SUBFAMILY Heliconiinae

All of the members of this subfamily possess yellowish abdominal scent glands (the glands being more highly developed in the female of each species and in the members of the genus *Heliconius*). These glands are everted when the butterflies are disturbed and emit acrid odors.

116. *Philaethria dido dido* (Clerck)

SPECIMENS: 4 ♂ ♂, 2 ♀ ♀; 900, 1,900 feet; 12 July-26 Oct.

This large green and black species is common in the *Pinus-Quercus* Associates of the Deciduous Woodland during the fall months. The butterflies were seen most frequently as they flew around the bright green foliage of mango and citrus trees or as they visited the flowers of cultivated marigolds (*Tagetes* sp.) in the Indian villages. The flight is relatively slow, weak, and usually between ten and 20 feet of the ground.

117. *Dryadula phaetusa* (Linnaeus)

SPECIMENS: 8 ♂ ♂, 3 ♀ ♀; 1,100-2,100 feet; 1 July-28 Sept.

This heliconian is common in Pastures, Recently Abandoned Milpas and along Hedgerows in the Catemaco Basin and along the coast but uncommon in most other localities. The butterflies are attracted to the blossoms of *Lantana camara*. The flight is of a moderate velocity and usually about four feet above the ground.

118. *Agraulis vanillae incarnata* (Riley)

SPECIMENS: 7 ♂ ♂, 2 ♀ ♀; 0-2,700 feet; 21 June-23 Oct.

The Gulf fritillary is abundant in the Littoral Woodland along the coast and common to uncommon in Pastures and Recently Abandoned Milpas in other sections of the range. The butterflies are attracted to the flowers of *Lantana camara*. The flight is slightly slower than that of the previous two species and usually between one and three feet of the ground.

119. *Dione juno huascama* (Reakirt)

SPECIMENS: 10 ♂ ♂, 5 ♀ ♀; 0-5,100 feet; 5 May-29 Oct.

This species is common to abundant in Pastures, Recently Abandoned Milpas and along Hedgerows in the Catemaco Basin but uncommon in most other localities. All specimens were collected on the blossoms of *Lantana camara*. The flight is similar to that of *Agraulis vanillae*.

120. *Dione moneta poeyii* (Butler)

SPECIMENS: 10 ♂ ♂; 4,700-5,400 feet; 2 March-26 Aug.

This species is common only above the canopy of the Elfin Woodland on the peaks of the major volcanoes. When collected, the butterflies were "hill topping."

121. *Dryas julia julia* (Fabricius)

SPECIMENS: 6 ♂♂, 7 ♀♀; 500-5,400 feet; 3 March-25 Aug.

The julia is common to abundant in most open, sunny areas regardless of plant formation. The species is the most common and widely distributed heliconian excepting the genus *Heliconius*. The flight is less rapid and usually nearer the ground than that of the preceding species.

122. *Heliconius (Eueides) cleobaea zorcaon* (Reakirt)

SPECIMENS: 14 ♂♂, 12 ♀♀; 0-2,300 feet; 11 Feb.-23 Oct.

This species is abundant and the most common heliconian in the Sierra, being found in or along the margins of all formations except the Montane Rain Forest, Montane Thicket, and Elfin Woodland. The flight is slow, relatively weak, and usually between three and six feet of the ground. The larval food plants are *Passiflora ambigua* in the Ocotil Chico region and *P. serratifolia* in the Catemaco Basin. Immature stages are described in Ross (1964d).

123. *Heliconius (Semelia) vibilia vialis* (Stichel)

SPECIMENS: 2 ♀♀; Vigía, 1,750 feet, 5 Aug. 1963, 1 ♀; Ocotil Chico, 1,900 feet, 28 Oct. 1962, 1 ♀.

This butterfly is rare; one female was collected as it fed on the blossoms of *Cephaelis elata* along a trail in the Lower Montane Rain Forest and the other as it fed on marigolds in a village garden.

124. *Heliconius (Semelia) lineata* (Salvin & Godman)

SPECIMENS: 9 ♂♂, 5 ♀♀; 700-5,100 feet; 26 May-19 Oct.

H. lineata is locally common and found primarily along the borders of the Semi-Evergreen Seasonal Forest and Lower Montane Rain Forest. Several specimens were collected as they fed on the flowers of *Cordia alliodora*, a white flowering shrub that is common in most fields and along the borders of forests. The flight is relatively slow, weak, and approximately ten to 15 feet above the ground.

125. *Heliconius (Semelia) aliphera gracilis* (Stichel)

SPECIMENS: 7 ♂♂, 3 ♀♀; 900-1,900 feet; 22 June-28 Sept.

This species is more common and less local than the preceding, being found most frequently in Pastures, Recently Abandoned Milpas and along Hedgerows and open, sunny road sides. Most specimens were collected as they fed on the white flowers

of *Bidens pilosa* var. *bimucronata*. The flight is relatively slow, weak, and usually within three or four feet of the ground.

126. *Heliconius (Heliconius) ismenius telchinia* Doubleday

SPECIMENS: 14 ♂♂, 10 ♀♀; 0-3,500 feet; 27 Feb.-5 Oct.

This large heliconian is abundant in all formations except the Montane Thicket, Elfin Woodland, Savanna, Deciduous Woodland (including the *Pinus-Quercus* Associates). The flight is relatively slow, weak, and approximately between six and eight feet of the ground. The butterflies seem to prefer partially shaded areas.

127. *Heliconius (Heliconius) doris transiens* Staudinger

SPECIMENS: 22 ♂♂, 4 ♀♀; 10-2,900 feet; 17 May-26 Oct.

This black and red species is locally abundant, the butterflies being found most frequently in sunny glades within the Lower Montane Rain Forest and Semi-Evergreen Seasonal Forest. The butterflies are attracted to the orange flowers of the vine *Anguria tabascensis*.

128. *Heliconius (Heliconius) sapho leuce* Doubleday

SPECIMENS: 31 ♂♂, 8 ♀♀; 700-3,200 feet; 17 March-29 Oct.

This blue and white heliconian is abundant only in the Lower Montane Rain Forest and Montane Rain Forest (including the *Liquidambar-Quercus* Associates) on the Santa Marta massif. The flight is relatively slow, weak, and usually between four and ten feet of the ground in sunny glades and along bright trails. The butterflies are attracted to the blossoms of *Anguria tabascensis*.

129. *Heliconius (Heliconius) sara veraepacis* Bates

SPECIMEN: 1 ♀; 0.25 mi. S Ocotil Grande, 1,800 feet, 15 May 1965.

This species is rare; the single female was collected in a coffee finca in the Lower Montane Rain Forest. The butterfly was flying approximately nine feet above the ground in the company of two individuals of *Heliconius doris*.

130. *Heliconius (Heliconius) petiveranus* Doubleday

SPECIMENS: 14 ♂♂, 4 ♀♀; 0-2,300 feet; 23 April-25 Oct.

Heliconius petiveranus is abundant in or along the margins of all formations except the Montane Rain Forest, Montane Thicket, and Elfin Woodland. The flight is extremely weak, in fact, the weakest of that of all species of *Heliconius* collected, and usually within two feet of the ground. The larval food plants are *Passiflora biflora* in the Ocotil Chico region and Catemaco Basin, and *P. coriacea* in the Catemaco Basin also. The immature stages have been described in Ross (1964d).

131. *Heliconius (Heliconius) charitonius vazquezae* Comstock & Brown

SPECIMENS: 6 ♂♂, 4 ♀♀; 700-1,800 feet; 16 Feb.-16 Sept.

The zebra is common to abundant in or along the margins of all formations except the Montane Thicket and Elfin Woodland. This species seems to prefer sunny, open areas more than do the other members of the subgenus *Heliconius*. The flight is relatively slow, weak, and usually between three and six feet of the ground.

132. *Heliconius (Heliconius) hortense* Guérin

SPECIMENS: 10 ♂♂, 5 ♀♀; 1,800-5,100 feet; 17 June-14 Oct.

This heliconian is uncommon and found only in the Montane Thicket, Elfin Woodland, and Montane Rain Forest. The butterflies were collected most frequently as they flew in sunny glades and along bright trails. The flight is relatively rapid and usually between two and five feet of the ground.

SUBFAMILY Nymphalinae

TRIBE Argynididi

133. *Euptoieta hegesia hoffmanni* Comstock

SPECIMENS: 5 ♂♂, 5 ♀♀; 1,100-2,200 feet; 6 June-28 Oct.

The Mexican fritillary is abundant in most sunny, open areas regardless of plant formation. The butterflies visit the flowers of a variety of plants. The flight is of moderate velocity and usually between two and three feet above the ground. The larval food plant is *Turnera ulmifolia*, a small plant that is common in sunny areas within the pine-oak forest and other relatively open areas on the Santa Marta massif. Ross (1964d) described the egg.

134. *Chlosyne janais* (Drury)

SPECIMENS: 12 ♂♂, 13 ♀♀; 0-2,000 feet; 18 March-18 Sept.

This relatively large *Chlosyne* is abundant in Pastures, Recently Abandoned Milpas, Littoral Woodland, Semi-Evergreen Seasonal Forest, and the Lower Montane Rain Forest when the larval food plant *Odontonema callistachyum* is present. The butterflies are particularly abundant in the pastures along the coast. The flight is relatively weak and interrupted by frequent gliding periods. Immature stages are described in Ross (1964d).

135. *Chlosyne hippodrome* (Geyer)

SPECIMENS: 15 ♂♂, 7 ♀♀; 500-2,200 feet; 30 June-31 Oct.

Chlosyne hippodrome is uncommon to common and found most frequently along sunny road sides and in Pastures and

Recently Abandoned Milpas. The butterflies visit the flowers of composites, particularly *Melampodium kunthianum* and *Baltimora recta*, very frequently. The behavior of *C. hippodrome* is different from that of the other four species of *Chlosyne* collected—the flight is slower with relatively uninterrupted wing beats and usually between seven and 15 feet above the ground. In addition, the butterflies visit mud puddles very infrequently.

136. *Chlosyne lacinia lacinia* (Geyer)

SPECIMENS: 14 ♂♂, 5 ♀♀; 1,100-2,700 feet; 20 June-25 Sept.

Scudder's patched butterfly is abundant (more abundant than *C. janais*) in most sunny, open areas throughout the range where flowers occur. The flight is similar to that of *C. janais*. The butterflies are attracted to mud puddles and flowers. One of the 19 specimens collected is almost totally dark and appears to be the morphotype named form *ardema* Reakirt.

137. *Chlosyne erodyle* (Bates)

SPECIMENS: 6 ♂♂, 7 ♀♀; 500-2,200 feet; 20 June-23 Oct.

This species is common only in grassy-shrubby fields within the Deciduous Woodland and the *Pinus-Quercus* Associates and several Recently Abandoned Milpas on the SSW slope of Volcán San Martín Tuxtla. Thus, the species seems to prefer slightly higher elevations than do the other species of *Chlosyne*. The behavior is very similar to that of *C. janais* and *C. lacinia*.

138. *Chlosyne definitiva* Aaron

SPECIMEN: 1 ♀; 1.25 mi. N Ocotil Chico, 2,300 feet, 26 July 1963.

This species is rare; the single female was taken as it fed on *Calea longipedicellata* in the *Pinus-Quercus* Associates of the Deciduous Woodland.

139. *Thessalia theona theona* (Ménétriés)

SPECIMENS: 16 ♂♂, 7 ♀♀; 0-4,700 feet; 17 March-4 Oct.

This checker spot is locally abundant and found in colonies in most open, sunny grassy areas, but particularly those within the Savanna, and Deciduous Woodland (including the *Pinus-Quercus* Associates). The flight is relatively rapid, erratic, and usually within two feet of the ground—very much like that of *Phyciodes* spp.

140. *Phyciodes (Phyciodes) vesta* (Edwards)

SPECIMENS: 6 ♂♂, 7 ♀♀; 1,050-1,900 feet; 17 June-13 Nov.

The vesta crescent is common in most open, sunny areas regardless of plant formation. The flight is of moderate velocity, rather erratic, and usually within two feet of the ground. The

butterflies are attracted to the flowers of a variety of plants. The species is represented in the Sierra by the morphotype known as form *bucardi* Godman & Salvin.

141. *Phyciodes (Eresia) frisia tulcis* (Bates)

SPECIMENS: 10 ♂♂, 4 ♀♀; 1,050-1,700 feet; 27 June-28 Sept.

The Cuban crescent is common and found primarily in Pastures and Recently Abandoned Milpas in the Catemaco Basin. The behavior is similar to that of *P. vesta*, which is typical of most members of the genus.

142. *Phyciodes (Eresia) claudina guatemalena* (Bates)

SPECIMENS: 7 ♂♂, 7 ♀♀; 75-2,600 feet; 6 Feb.-19 Oct.

This species is abundant in most open, sunny areas, particularly along the margins of Hedgerows and the Semi-Evergreen Seasonal Forest. The flight is slightly slower and weaker than that of most species of *Phyciodes* but similar to that of several heliconians—particularly *Dryas julia* and *Heliconius aliphera*, both of which are sympatric with *P. claudina guatemalena*.

143. *Phyciodes (Eresia) phillyra* (Hewitson)

SPECIMENS: 15 ♂♂, 11 ♀♀; 700-2,700 feet; 14 July-19 Oct.

This dimorphic species is locally common in and along the margins of the Lower Montane Rain Forest and the Semi-Evergreen Seasonal Forest and also in Recently Abandoned Milpas. The males were collected most frequently in the semi-shaded areas along the margins of forests and in sunny fields providing forest cover was near; the flight is rapid and erratic, very similar to that of the heliconians *Dione juno* and *Agraulis vanillae*. The females were found most frequently in shaded areas just within the forests; the flight is very slow and weak, very similar to that of several ithomiids and polymorphines. Both sexes are attracted to flowering composites, particularly *Bidens pilosa* var. *bimucronata*, which is common in fields and along the margins of forests.

144. *Phyciodes (Tritanassa) atronia* (Bates)

SPECIMENS: 4 ♂♂, 2 ♀♀; 1,500-2,200 feet; 24 Aug.-19 Oct.

This crescent is locally common in Recently Abandoned Milpas and Pastures. During the summer I found individuals feeding on blossoming composites only in several fields on the SSW slope of Volcán San Martín Tuxtla. However, later in the year (fall) I found the species at lower elevations in several fields in the vicinity of Sontecomapan. The behavior is typical of most members of the genus.

145. *Phyciodes (Tritanassa) ardys ardys* Hewitson

SPECIMENS: 10 ♂♂, 3 ♀♀; 1,100, 1,800 feet; 20 June-23 Oct.

This crescent is common—principally in the Catemaco Basin—in Recently Abandoned Milpas and Pastures. The behavior is similar to that of most species of *Phyciodes*.

146. *Phyciodes (Tritanassa) eranites mejicana* (Roeber)

SPECIMEN: 1 ♀; 2.5 mi. SW Sontecomapan, 1,500 feet, 19 Oct. 1962.

This species is rare; the single specimen was collected as it fed on the yellow blossoms of *Baltimora recta*, which was growing in a pasture bordered by Lower Montane Rain Forest.

147. *Phyciodes (Tritanassa) myia* (Hewitson)

SPECIMENS: 13 ♂♂, 14 ♀♀; 800-2,700 feet; 15 May-18 Oct.

Phyciodes myia is locally abundant, being found principally in Pastures and Recently Abandoned Milpas and along sunny road sides. The largest concentration of butterflies was found on the peak of Cerro Tuxtla. The butterflies visit the flowers of *Melampodium kunthianum*, *Bidens pilosa* var. *bimucronata*, and *Baltimora recta* very frequently. The behavior is typical of most species of *Phyciodes*.

148. *Phyciodes (Tritanassa) griseobasolis* Roeber

SPECIMENS: 9 ♂♂, 4 ♀♀; 1 mi. SE Sontecomapan, 700 feet, 14 July 1962; 1 ♂: 3 mi. SW Sontecomapan, 1,600 feet, 1 Oct. 1962, 3 ♂♂: 2.5 mi. SW Sontecomapan, 1,700 feet, 18 Sept. 1962, 1 ♂, 3 ♀♀: 8 mi. SSE Catemaco, 1,950 feet, 29 Sept. 1962, 1 ♂: 3 mi. W Santiago Tuxtla, 2,100 feet, 22 June 1962, 1 ♂; 2,700 feet, 22 June 1962, 2 ♂♂, 1 ♀.

This species, which is a sibling of *P. myia*, is locally abundant (but slightly less so than the sibling) in Pastures and Recently Abandoned Milpas and along sunny road sides. Both species appear to be completely sympatric. In fact, the largest concentration of *P. griseobasolis* was found also on the peak of Cerro Tuxtla. The behavior is typical of most members of the genus. The nearest recorded locale for *P. griseobasolis* (= *P. ofella*) is the "Oriente & Sur de Chiapas" (Hoffmann, 1940).

149. *Phyciodes (Tritanassa) clara* (Bates)

SPECIMEN: 1 ♀; 2.5 mi. SW Sontecomapan, 1,300 feet, 6 Aug. 1962.

This crescent is rare; the single female was collected along the margin of the Lower Montane Rain Forest. The butterfly was resting on a leaf approximately three feet above the ground.

TRIBE Nymphalini

150. *Polygonia g-argenteum* (Doubleday & Hewitson)

SPECIMENS: 2 ♀ ♀ ; 2.5 mi. SW Sontecomapan, 1,200 feet, 18 Nov. 1962.

This angle wing is rare and was collected in the Lower Montane Rain Forest. The two females were given to me by a local collector (Abraham Ramírez) who supposedly collected them in trap nets (rotting bananas being used as bait).

151. *Vanessa virginiensis* (Drury)

SPECIMENS: 11 ♂ ♂ , 6 ♀ ♀ ; 1,900-5,400 feet; 16 June-30 Oct.

The painted lady is locally common and found principally in the Elfin Woodland and the *Pinus-Quercus* Associates of the Deciduous Woodland. Most specimens were collected as they engaged in "hill-topping" over the high peaks and knolls within the range, particularly Cerro Tuxtla. However, individuals occasionally were seen as they rested on the red dirt trails within the pine-oak forest. The flight is of moderate velocity, erratic, and usually between four and 15 feet of the ground.

152. *Junonia evarete evarete* (Cramer)

SPECIMENS: 3 ♂ ♂ , 10 ♀ ♀ ; 1,100-2,700 feet; 17 March-26 Oct.

The buckeye is fairly common along roads and trails in the Deciduous Woodland and the *Pinus-Quercus* Associates. The butterflies were collected most frequently as they rested on sunlit bare soil with their wings held in horizontal positions. The flight is rather rapid, erratic, and usually of short duration.

153. *Anartia jatrophae luteipicta* Fruhstorfer

SPECIMENS: 8 ♂ ♂ , 4 ♀ ♀ ; 0-2,700 feet; 11 Nov.-27 Aug.

The white peacock is common in most open, sunny areas regardless of plant formation, but especially at lower elevations. The butterflies are attracted to a variety of flowering plants. The flight is relatively slow and usually between one and three feet of the ground.

154. *Anartia fatima venusta* Fruhstorfer

SPECIMENS: 5 ♂ ♂ , 5 ♀ ♀ ; 0-1,800 feet; 27 Feb.-28 Aug.

The fatima is the most abundant and widely distributed butterfly in the Sierra, being found in practically all open and sunny areas regardless of plant formation. The behavior is similar to that of the preceding species. Two specimens collected in

the spring have the ventral surfaces of their wings coated with brown scales.

155. *Metamorpha stelenes biplagiata* (Fruhstorfer)

SPECIMENS: 14 ♂♂, 2 ♀♀; 1,100, 1,200 feet; 21 June-8 Oct.

The malachite is common along the margins of the Semi-Evergreen Seasonal Forest and along Hedgerows in the vicinity of Lago Catemaco. Most butterflies were collected as they fed on the fermenting juices of fallen mangos and figs (*Ficus padifolia*). The specimens collected in August, September, and October, have the ventral surfaces of their wings coated with silvery scales; this morphotype has been named form *pallida* Fruhstorfer. The flight is characteristic of most species of nymphalines—rather rapid, erratic, and usually between five and ten feet of the ground.

156. *Metamorpha epaphus* (Latreille)

SPECIMENS: 3 ♂♂, 6 ♀♀; 1,100-2,450 feet; 3 March-20 Sept.

This species is common in Recently Abandoned Milpas on the SSW slope of Volcán San Martín Tuxtla but uncommon in all other locales. Most butterflies were collected as they fed on the blossoms of unidentified tall yellow composites. The flight is of moderate velocity and usually relatively high—approximately between 12 and 20 feet above the ground.

157. *Hypanartia lethe* (Fabricius)

SPECIMENS: 4 ♂♂, 2 ♀♀; 1,100-1,950 feet; 24 June-18 Nov.

H. lethe is uncommon and found most frequently along the margins of the Lower Montane Rain Forest and Semi-Evergreen Seasonal Forest. The butterflies were collected as they fed on *Bidens pilosa* var. *bimucronata* and as they rested in head downward positions on leaves of trees and bushes. The flight is similar to that of most members in the tribe Nymphalini.

158. *Hypanartia dione* Latreille

SPECIMENS: 1 ♂, 1 ♀; 3 mi. NNW Ocotil Chico, 5,000 feet, 15 June 1965, 1 ♀: Peak Volcán Santa Marta, 5,100 feet, 6 June 1965, 1 ♂.

This species is rare and found only in the Elfin Woodland on Volcán Santa Marta. Both specimens were collected as they rested on bare soil on ridge slopes that recently had been defoliated by landslides (two additional butterflies were seen in these same areas). The flight is very rapid, erratic, and between two and five feet of the ground.

TRIBE Biblini

159. *Biblis hyperia aganisa* Boisduval

SPECIMENS: 2 ♂♂, 7 ♀♀; 1,100-2,600 feet; 12 March-5 Oct.

This nymphalid is common and found principally along the margins of the Lower Montane Rain Forest and Semi-Evergreen Seasonal Forest and along Hedgerows. The butterflies seem to prefer partially shaded areas. The flight is very weak, slow, and usually within one or two feet of the ground. The blossoms of *Lantana camara* are attractive to the species.

TRIBE Eunicidi

160. *Mestra amymone* (Ménétriés)

SPECIMENS: 8 ♂♂, 5 ♀♀; 500-1,900 feet; 9 June-18 Oct.

The amymone is abundant in the Savanna, Deciduous Woodland and the *Pinus-Quercus* Associates, Recently Abandoned Milpas, and Pastures and along Hedgerows on the Santa Marta massif but common to uncommon in most other sections of the range. The flight is very slow, weak, and usually between one and three feet of the ground.

161. *Pyrrhogyra hypensor* Godman & Salvin

SPECIMENS: 2 ♂♂, 11 ♀♀; 0-2,700 feet; 16 June-18 Aug.

This butterfly is common along the margins of the Swamp Forest but uncommon in all other formations. Most specimens were collected as they rested on leaves between five and ten feet of the ground along the banks of the Río Carizal. The flight is similar to that of most species in the family.

162. *Pyrrhogyra edocla aenaria* Fruhstorfer

SPECIMEN: 1 ♂; 2 mi. NE Catemaco, 1,100 feet, 7 Aug. 1962.

This species is rare; the single male was collected as it flew along the sunny driveway of the Hotel Playa Azul. The flight is similar to that of most other nymphalids.

163. *Pyrrhogyra otolais neis* Felder

SPECIMENS: 7 ♂♂, 20 ♀♀; 0-2,500 feet; 19 May-18 Nov.

This butterfly is common and the most common species of *Pyrrhogyra* in the Sierra; the species is found most commonly in the Lower Montane Rain Forest, Semi-Evergreen Seasonal Forest, Swamp Forest, Mangrove Woodland, and along Hedge Rows. The butterflies habitually rest on leaves between three and ten feet above the ground. When an individual is disturbed, it flies very rapidly and erratically upward into the canopy but after a few minutes returns to the same perch or to one nearby.

164. *Pseudonica flavilla canthara* (Doubleday)

SPECIMENS: 3 ♂♂, 6 ♀♀; 1,100-2,550 feet; 20 Feb.-18 Oct.

This nymphalid is uncommon; all butterflies were found along the margins of the Lower Montane Rain Forest, Semi-Evergreen Seasonal Forest, and Hedgerows. The flight is typical of most members of the family.

165. *Temenis laothoe liberia* (Fabricius)

SPECIMENS: 4 ♂♂, 6 ♀♀; 150-1,625 feet; 9 July-19 Oct.

This species is uncommon, being found only along the margins of the Semi-Evergreen Seasonal Forest. When collected, the butterflies were resting on leaves approximately two to five feet above the ground.

166. *Epiphile adrasta bandusia* Fruhstorfer

SPECIMENS: 3 ♂♂, 3 ♀♀; 1,100-2,300 feet; 29 June-30 Oct.

This species is uncommon and found only along the margins of the Semi-Evergreen Seasonal Forest. The butterflies usually rest on the undersurfaces of leaves with the wings held in a horizontal position and the heads downward and protruding just beyond the margins of the leaves. The flight is rapid and erratic.

167. *Epiphile plutonia* Bates

SPECIMENS: 5 ♂♂; 2.5 mi. NNW Ocotil Chico, 3,600 feet, 30 March 1965, 1 ♂; 3 mi. NNW Ocotil Chico, 4,100 feet, 30 July 1963, 1 ♂; 4,400 feet, 17 June 1963, 1 ♂; 4,800 feet, 16 July 1963, 2 ♂♂.

Epiphile plutonia is local, uncommon, and found only in the Montane Thicket on the upper slopes of Volcán Santa Marta. The butterflies were seen most frequently as they chased each other or as they rested on leaves (usually between ten and 20 feet above the ground) in patches of sunlight. The flight is very rapid and erratic. The present data are the only records of this species from Mexico. The nearest locale is the Polochic Valley of Guatemala (Godman & Salvin, 1879-1901).

168. *Catonephele nyctimus* (Westwood)

SPECIMENS: 13 ♂♂, 9 ♀♀; 700-3,750 feet; 9 Feb.-18 Oct.

This dimorphic species is uncommon to common and found in and along the margins of the Semi-Evergreen Seasonal Forest and Lower Montane Rain Forest. The males usually were seen along the margins of the forests whereas the females seemed to prefer the more shaded areas just within the forests. Both males and females fly within a few feet of the ground and usually within dense underbrush. The flight of the female is slower and weaker than that of the male and is very similar to that of

Heliconius charitonius (Heliconiinae) and female *Itaballia viardi* (Pieridae).

169. *Catonephele numilia esite* (Felder)

SPECIMENS: 4 ♂♂, 2 ♀♀; 1,100-2,700 feet; 7 May-1 Aug.

This dimorphic species is uncommon and found principally in the Lower Montane Rain Forest and the *Liquidambar-Quercus* Associates of the Montane Rain Forest. The butterflies seem to prefer less disturbed forests than do those of the related species *C. nyctimus*. The males usually were found along sunny trails within the forests (often visiting mule dung) whereas the females preferred the more shaded areas off the trails. The flight of the female is much slower and weaker than that of the male, which has a typical nymphalid flight.

170. *Nessaia aglaura* (Westwood & Hewitson)

SPECIMENS: 3 ♂♂, 4 ♀♀; 0-1,950 feet; 25 June-24 Sept.

Nessaia aglaura is uncommon in the Sierra; most specimens were collected in trap nets (using mangoes as bait) that were placed in the small patches of Semi-Evergreen Seasonal Forest bordering Lago Catemaco. The flight is characteristic of most members of the family.

171. *Myscelia cyaniris* Doubleday & Hewitson

SPECIMENS: 4 ♂♂, 8 ♀♀; 150-2,000 feet; 7 June-19 Sept.

This nymphalid is uncommon, seasonal, and local; most butterflies were collected in Pastures and the Semi-Evergreen Seasonal Forest in the vicinity of Lago Catemaco in August and September. The butterflies are attracted to sap oozing from trees.

172. *Myscelia rogenhoferi* Felder

SPECIMEN: 1 ♀; 2 mi. NE Catemaco, 1,100 feet, 22 Sept. 1962.

This rare species was collected in a small patch of Semi-Evergreen Seasonal Forest bordering Lago Catemaco. The single female was resting on a small tree trunk when collected.

173. *Eunica monima* (Stoll)

SPECIMENS: 1 ♂, 3 ♀♀; 1,100, 1,800 feet; 6 June-2 Aug.

E. monima is uncommon and found only in Pastures. All butterflies were feeding on the blossoms of *Lantana camara* when collected.

174. *Eunica alcmene alcmene* Doubleday & Hewitson

SPECIMENS: 4 ♂♂; 1,900-2,600 feet; 16 June-12 July.

This *Eunica* is uncommon and found only in the Deciduous Woodland. All four butterflies were collected as they rested on living oak leaves and dead leaves on the ground. The flight is very rapid and erratic.

175. *Catagramma lyca* Doubleday & Hewitson

SPECIMENS: 6 ♂♂, 9 ♀♀; 2.25 mi. SW Sontecomapan, 800 feet, 14 July 1962, 2 ♀♀; 2.5 mi. SW Sontecomapan, 800 feet, 16 July 1962, 2 ♀♀; 900 feet, 15 July 1962, 1 ♀; 3 mi. SW Sontecomapan, 900 feet, 17 July 1962, 4 ♂♂; 2.5 mi. NE Tapalapan, 1,500 feet, 31 Aug. 1962, 1 ♂; 5 mi. E Cuetzalapan, 2,450 feet, 18 Aug. 1962, 1 ♂, 1 ♀; 3 mi. NNW Ocotal Chico, 17 June 1963, 1 ♀; 3 July 1963, 1 ♀; 4,200 feet, 30 July 1963, 1 ♀.

This species is locally common and found principally in the Lower Montane Rain Forest. The butterflies were collected most frequently as they rested on the undersurfaces of leaves approximately seven to 12 feet above the ground along relatively wide forest trails. Usually more than one individual was seen at any one locale. The flight is extremely rapid, erratic, and never below five to six feet of the ground. *C. lyca* has not been recorded previously from Veracruz. The nearest recorded locale is Tabasco (Hoffmann, 1940).

176. *Catagramma titania* Salvin

SPECIMENS: 6 ♂♂; 1,100 feet; 25 July-16 Oct.

This nymphalid is uncommon and found only in Pastures and along the margins of the Semi-Evergreen Seasonal Forest in the Catemaco Basin. The flight is very fast and erratic and usually slightly lower than that of *C. lyca*.

177. *Catagramma casta* Salvin

SPECIMEN: 1 ♀; 4 mi. NE Ocotal Grande, 1,200 feet, 9 June 1965.

This species is rare; the single female was collected along a sunny trail within the Lower Montane Rain Forest near the small village of Encinal. Several other specimens were seen at the same locale; these were darting from tree to tree between 15 and 30 feet above the ground. Thus, of the three species of *Catagramma* collected, *C. casta* seems to be the most uncommon and the most inaccessible.

178. *Diaethria anna* (Guérin)

SPECIMENS: 7 ♂♂, 12 ♀♀; 0-3,400 feet; 15 June-30 Oct.

Although common, the species is fairly local. Most butterflies were collected as they rested on leaves approximately three to five feet above the ground along the margins of the Lower Montane Rain Forest and the Semi-Evergreen Seasonal Forest. The butterflies are attracted to moist soil. The flight is very rapid and erratic.

179. *Diaethria astala* (Guérin)

SPECIMENS: 5 ♂♂; 1,100, 2,450 feet; 3 Aug.-15 Oct.

This species is uncommon, being found principally in Pastures and along the margins of the Semi-Evergreen Seasonal Forest. The butterflies seem to prefer less forested areas than does *D. anna*. The flight is similar to that of *D. anna*.

180. *Dynamine mylitta* (Cramer)

SPECIMENS: 15 ♂♂, 16 ♀♀; 500-2,700 feet; 20 May-14 Sept.

This dimorphic species is abundant in most open, sunny areas regardless of plant formation (except the Montane Rain Forest, Montane Thicket, and Elfin Woodland). The butterflies visit mud puddles very frequently. The flight usually is of moderate velocity and usually within two feet of the ground.

181. *Dynamine dyonis* Geyer

SPECIMENS: 3 ♂♂, 10 ♀♀; 1,625-2,550 feet; 23 March-28 Oct.

D. dyonis is much less abundant and more local in distribution than the preceding species, being found principally along the margins of the Lower Montane Rain Forest and the Semi-Evergreen Seasonal Forest. The flight is similar to that of *D. mylitta*.

TRIBE Ageroniidi

182. *Hamadryas februa gudula* (Fruhstorfer)

SPECIMENS: 12 ♂♂, 6 ♀♀; 0-2,000 feet; 5 Feb.-23 Oct.

H. februa gudula is common to abundant throughout most of the Sierra, being found most frequently in Pastures and along the margins of all forests. This species (as well as the other five members of the genus) spend most of their time resting on the trunks and limbs of lichen-encrusted trees (particularly *Inga spuria*) or feeding on fermenting sap oozing from the injured trunks of citrus trees. The butterflies rest head downward and hold their wings in a horizontal position usually flat against the substrate. When changing positions, the butterflies walk with the wings constantly held in the horizontal plane. This resting behavior coupled with the wing coloration render the butterflies very inconspicuous. The butterflies are very "aggressive" and when anyone or any relatively large animal passes near a "perched" butterfly, it usually darts at the moving object making a characteristic clicking noise that can be discerned for distances as great as 50 to 100 feet away. After pursuing the moving object for a few seconds, the butterfly usually returns to the same tree or another nearby. As reported in Ross (1963), territoriality was

not demonstratable in this group—at least not for *H. februa gudula* and *H. g. guatemalena*.

183. *Hamadryas feronia farinulenta* (Fruhstorfer)

SPECIMENS: 6 ♂♂, 5 ♀♀; 1,100-2,400 feet; 5 Feb.-23 Oct.

This species is common only in the Deciduous Woodland and the *Pinus-Quercus* Associates. See comments under *H. februa gudula* listing for description of behavior.

184. *Hamadryas guatemalena guatemalena* (Bates)

SPECIMENS: 7 ♂♂, 2 ♀♀; 2 mi. NE Catemaco, 1,100 feet, 20 June 1962, 1 ♂; 25 July 1962, 1 ♂; 26 July 1962, 1 ♂; 11 Aug. 1962, 1 ♂; 28 Aug. 1963, 1 ♀; 29 Aug. 1963 1 ♂ (LSUMZ); 11 Sept. 1962, 1 ♂; 12 Sept. 1962, 1 ♀; 3 Oct. 1962, 1 ♂.

Although abundant in Pastures in the vicinity of Lago Catemaco, *H. g. guatemalena* nonetheless is less common than *H. februa gudula*. In other sections of the range, the species is only common to uncommon. See comments under *H. februa gudula* listing for description of behavior. The species was recorded previously from Veracruz only from the "Sierra Madre Oriental" (Hoffmann, 1940).

185. *Hamadryas iphthime* (Bates)

SPECIMEN: 1 ♂; 2 mi. NE Catemaco, 1,100 feet, 12 Sept. 1962.

This single individual was collected as it fed on sap oozing from the trunk of a citrus tree in a pasture. However, because of the close similarity between this species and several others in the genus, the possibility exists that I overlooked other individuals; thus the species may not be as rare as the data indicate.

186. *Hamadryas amphinome mexicana* (Lucas)

SPECIMENS: 7 ♂♂, 4 ♀♀; 1,100 feet; 20 June-3 Oct.

This species is uncommon but widely distributed throughout the range, being found principally in relatively open areas. The behavior is similar to that of other members of the genus.

187. *Hamadryas laodamia laodamia* (Cramer)

SPECIMENS: 1 ♂, 4 ♀♀; 1,100, 1,900 feet; 11 Aug.-7 Oct.

This *Hamadryas* is uncommon and found in Pastures. All butterflies were collected as they rested on the trunks of *Inga spuria*. The behavior is typical of other members of the genus.

188. *Marpesia chiron* (Fabricius)

SPECIMENS: 11 ♂♂, 5 ♀♀; 1,100-2,450 feet; 29 March-29 Oct.

The many banded dagger wing is abundant in most open, sunny areas and unrestricted to any plant formation; however, the butterflies are more common in the Deciduous Woodland

and the *Pinus-Quercus* Associes. During July 1963, a very large emigration of this species occurred on the Santa Marta massif (perhaps elsewhere, too). At that time hundreds and thousands of individuals were seen each day as they flew between eight and 20 feet of the ground in a northeasterly direction towards the coast. Occasionally several individuals would stop to visit mud puddles and the flowers of *Cordia spinescens*. The local inhabitants of the region informed me that this July emigration is an annual event and that it occurs in other parts of the Sierra as well as in the Ocotal region.

189. *Marpesia harmonia* (Klug)

SPECIMENS: 11 ♂♂; 5 ♀♀; 1,100-2,450 feet; 6 June-18 Sept.

This gold and silver species is locally common and found primarily around mud puddles (particularly on the grounds of the Catemaco Bottling Company—4.5 mi. NE Catemaco). However individuals also were netted frequently as they fed on the blossoms of *Cordia spinescens* and *Bidens pilosa* var. *bimucronata*. A sleeping assemblage consisting of approximately 15 butterflies (both males and females) was found at 9:00 A.M. on 6 June 1963 in a ravine within a *Bursera-Inga* community. The butterflies were resting on the undersurfaces of the leaves of *Cecropia mexicana*. I returned to the area several days later and periodically throughout the summer but never did I observe another congregation of butterflies. The flight of *M. harmonia* is relatively rapid, erratic, and usually between six and 15 feet of the ground.

190. *Marpesia corita* (Westwood)

SPECIMENS: 7 ♂♂, 3 ♀♀; 1,800-5,000 feet; 9 Feb.-18 Aug.

This *Marpesia* is locally common and found primarily along sunny trails in the Lower Montane Rain Forest, Montane Rain Forest and the *Liquidambar-Quercus* Associes. The butterflies fly very rapidly between one and two feet of the ground and pause frequently to alight on soil and rocks.

191. *Marpesia petreus* (Cramer)

SPECIMENS: 6 ♂♂, 4 ♀♀; 0-1,800 feet; 15 May-28 Aug.

The ruddy dagger wing is uncommon and found primarily along Hedgerows in the vicinity of Lago Catemaco. The butterflies were collected most frequently as they rested on leaves approximately three to six feet above the ground. The flight is rapid and erratic.

TRIBE Limnitiini

192. *Limenitis (Adelpha) melanthæ* (Bates)

SPECIMENS: 3 ♂♂, 2 ♀♀; 1,100-2,600 feet; 10 March-10 Nov.

This admiral is uncommon and local, most individuals being taken as they engaged in "hill topping" over a sunny knoll in the *Pinus-Quercus* Associates of the Deciduous Woodland. The flight is fast, erratic and usually above eight feet of the ground.

193. *Limenitis (Adelpha) leuceria* (Druce)

SPECIMENS: 11 ♂♂, 3 ♀♀; 2,100-5,400 feet; 24 March-4 Sept.

This species is common in the Montane Rain Forest, Montane Thicket, and Elfin Woodland. The butterflies usually were collected as they rested on leaves approximately six to 12 feet above the ground along relatively wide, sunny trails. The flight is very rapid, erratic, and usually in excess of six feet of the ground.

194. *Limenitis (Adelpha) erotia* (Hewitson)

SPECIMEN: 1 ♂; 2 mi. NE Catemaco, 1,100 feet, 2 Aug. 1962.

This species is rare; the single male was collected in a trap net (fermenting mangoes being used as bait) in a pasture bordering Lago Catemaco. *L. erotia* has not been recorded from Veracruz. The nearest recorded locales are "Sur y Oriente de Chiapas" (Hoffmann, 1940).

195. *Limenitis (Adelpha) oberthuri* (Boisduval)

SPECIMENS: 2 ♂♂; 3 mi. SW Sontecomapan, 1,600 feet, 1 Oct. 1962, 1 ♂; 5 mi. E Cuetzalapan, 2,450 feet, 17 Aug. 1962, 1 ♂.

This admiral is rare and found only in the Lower Montane Rain Forest. Both males were resting on leaves along sunny trails when collected. This species has not been recorded from Mexico. The nearest recorded locale is the Polochic Valley of Guatemala (Godman & Salvin, 1879-1901).

196. *Limenitis (Adelpha) iphicla* (Linnaeus)

SPECIMENS: 4 ♂♂, 10 ♀♀; 900-2,600 feet; 19 June-23 Oct.

Limenitis iphicla is common throughout most of the Sierra and is found along the margins of the Lower Montane Rain Forest, Semi-Evergreen Seasonal Forest, and the Deciduous Woodland (including the *Pinus-Quercus* Associates). Within the oak and pine-oak communities, *L. iphicla* is the most common species of *Limenitis*. The flight is rapid, erratic, and usually between six and 12 feet of the ground.

197. *Limenitis (Adelpha) basiloides* (Bates)

SPECIMENS: 2 ♂♂, 2 ♀♀; 30-1,800 feet; 25 July-23 Oct.

This nymphalid is uncommon, being found along Hedgerows and the margins of the Lower Montane Rain Forest and Semi-Evergreen Seasonal Forest. All four specimens were collected as they rested on leaves approximately five to eight feet above the ground.

198. *Limenitis (Adelpha) felderi* (Boisduval)

SPECIMENS: 1 ♂, 1 ♀; 3.5 mi. SW Sontecomapan, 1,100 feet, 15 July 1962, 1 ♀; 1.25 mi. NE Ocotil Chico, 2,600 feet, 12 July 1963, 1 ♂.

This species is rare; the female was collected as it flew about three feet above the ground in a bamboo thicket in the Semi-Evergreen Seasonal Forest, and the male as it rested on a leaf in a partially shaded area of disturbed Lower Montane Rain Forest. Thus, it appears as if this species prefers more shaded and heavily forested areas than do most of the related species.

199. *Limenitis (Adelpha) sentia* (Godman & Salvin)

SPECIMENS: 2 ♀♀; 1.75 mi. E Sontecomapan, 0 feet, 6 Aug. 1962, 1 ♀; 2 mi. NE Catemaco, 1,100 feet, 14 Sept. 1962, 1 ♀.

This species, like the preceding, is rare and seems to be restricted to Swamp Forest and Pasture plant formations. The flight is similar to that of most nymphalids. The nearest recorded locale is "Península de Yucatán" (Hoffmann, 1940).

200. *Limenitis (Adelpha) paraeca* (Bates)

SPECIMENS: 5 ♂♂, 11 ♀♀; 0-2,500 feet; 10 May-23 Oct.

This admiral is common to abundant and the most common and widespread species of *Limenitis* in the Sierra. The butterflies are numerous both along the margins of forests and thickets and in pastures. The behavior is similar to that of most other species in the genus.

TRIBE Apaturidi

201. *Apatura cherubina* (Felder)

SPECIMEN: 1 ♀; 3 mi. WSW Santiago Tuxtla, 2,100 feet, 30 Aug. 1962.

This species is rare; the single female was collected as it rested on a leaf approximately five feet above the ground beside the dirt road ascending Cerro Tuxtla; the road is bordered by Semi-Evergreen Seasonal Forest.

202. *Apatura pavon* (Latreille)

SPECIMENS: 1 ♂, 2 ♀ ♀; 1,100 feet; 22-30 July.

Apatura pavon is uncommon and restricted to Pastures. All specimens were collected as they rested on the leaves of shrubs. Disturbed butterflies fly very rapidly but for only short distances (usually eight to 12 feet); they then alight on leaves.

203. *Apatura laure* (Drury)

SPECIMENS: 2 ♂ ♂, 1 ♀; 500, 1,100 feet; 30 June-22 Aug.

This *Apatura* is uncommon; one butterfly was collected as it rested on a paved highway, another as it was feeding on the flowers of *Cordia spinescens* in a pasture, and the third as it was flying rapidly about three feet above the ground in a pasture.

204. *Historis odius* (Fabricius)

SPECIMENS: 2 ♂ ♂, 3 ♀ ♀; 500-1,600 feet; 6 June-1 Oct.

This species is uncommon; most butterflies were collected as they fed on sap oozing from the trunks of citrus trees growing in Pastures in the vicinity of Lago Catemaco. The flight is extremely rapid with powerful wing beats, erratic, and usually in excess of six feet of the ground.

205. *Smyrna blomfildia datis* Fruhstorfer

SPECIMENS: 9 ♂ ♂, 6 ♀ ♀; 1,100 feet; 28 July-22 Sept.

Although common in the vicinity of Lago Catemaco, *S. blomfildia datis* is uncommon elsewhere. All butterflies were netted as they fed on sap oozing from citrus trees growing in Pastures. The flight is extremely rapid, erratic, and usually in excess of six feet of the ground.

206. *Gynaecia dirce* (Linnaeus)

SPECIMENS: 3 ♂ ♂, 8 ♀ ♀; 800-1,950 feet; 4 Feb.-24 Sept.

Gynaecia dirce is common only in the Catemaco Basin; most butterflies were collected either as they fed on sap oozing from citrus trees in Pastures or in trap nets in small sections of the Semi-Evergreen Seasonal Forest bordering Lago Catemaco. The flight is similar to that of most members of the family.

TRIBE Charaxidi

207. *Prepona demophon centralis* Fruhstorfer

SPECIMENS: 8 ♂ ♂, 1 ♀; 900, 1,100 feet; 9 July-1 Nov.

This species is locally common and found primarily in Pastures in the vicinity of Lago Catemaco. The butterflies were collected most frequently as they imbibed fermenting sap oozing from the trunks of citrus trees. The flight of this species (as well as that of the other four species in the genus) is extremely rapid with powerful wing beats, erratic, and usually between six and 15 feet of the ground.

208. *Prepona antimache gulina* Fruhstorfer

SPECIMENS: 5 ♂ ♂, 3 ♀ ♀; 900, 1,100 feet; 10 May-8 Oct.

This species is locally common and was collected under the same circumstances as *P. demophon centralis*.

209. *Prepona amphimachus* (Fabricius)

SPECIMENS: 5 ♂ ♂, 3 ♀ ♀; 1,100 feet; 27 July-2 Nov.

This *prepona* is locally common and restricted to Pastures in the Catemaco Basin.

210. *Prepona laertes pallantias* Fruhstorfer

SPECIMENS: 2 ♀ ♀; 2 mi. NE Catemaco, 1,100 feet, 14 Sept. 1962, 1 ♀; 3 Oct. 1962, 1 ♀.

This nymphalid is rare; both females were collected as they imbibed fermenting sap oozing from citrus tree trunks in Pastures.

211. *Prepona brooksiana* Godman & Salvin

SPECIMEN: 1 ♀; 4 mi. N Ocotil Chico, 4,100 feet, 3 Aug. 1963.

This large *Prepona* is rare; the single female was collected in the Montane Thicket on Volcán Santa Marta. It was flying relatively slowly around several small trees as if searching for a suitable site on which to oviposit. Another individual was seen in the same type forest on Volcán San Martín Tuxtla on 26 August 1962. The species is recorded from Veracruz only from Coatepec (Hoffmann, 1940).

212. *Anaea (Siderone) marthesia* (Cramer)

SPECIMENS: 2 ♀ ♀; 2 mi. NE Catemaco, 1,100 feet, 22 July 1962, 1 ♀; 5 Nov. 1962, 1 ♀.

This brilliantly colored leaf wing is rare; one butterfly was collected as it flew approximately six feet above the ground through a pasture and another as it fed on fermenting sap oozing from a citrus tree growing in a pasture. The flight is very rapid and erratic. At rest, individuals (of this species as well as all other species in the genus) usually hold their wings in a vertical position so that a distinct break or notch is formed between the two pairs of wings. This behavior enhances the camouflage created by the ventral wing coloration by producing the illusion of a partially frayed leaf.

213. *Anaea (Zaretis) itys* (Cramer)

SPECIMENS: 2 ♂ ♂, 7 ♀ ♀; 1,100 feet; 9 Aug.-6 Oct.

This species is locally common and seasonal. Butterflies were collected in two habitats—Pastures and along Hedgerows in the